South Fork Wind | Powered by Ørsted & Eversource

South Fork Wind (SFW) is providing the following information in response to the EPA's request for information provided in an email dated December 20, 2021. EPA's requests are in italic font and SFW's responses are provided in regular font.

1. *Please explain how "shore power" from the grid is used to support the operational phase of the project, and implications to the project's operations if shore power from the grid becomes unavailable.*

   SFW Response: The South Fork export cable is a bi-directional cable, meaning that power can flow either from the wind farm to the grid (shore) or from the grid to the wind farm. The power required to operate the Project, known as station power or auxiliary power, is normally taken from the electricity generated by the SFW wind turbine generators (WTG), when they are operating normally. During periods when the wind is not sufficient for the WTGs to operate normally, or if the WTGs are not operating for any other reason, SFW may draw power from the grid (through the export cable) for the Project and its various systems and components.

   If shore power is not available, SFW must use alternative sources for the Project components. SFW's design has incorporated an alternative power source within the WTGs. Specifically, the WTGs will be equipped with an integrated battery backup system that can provide auxiliary power to the WTGs in the event of a temporary outage. The battery backup system is able to be charged by the WTG when operating. In the unlikely scenario where shore power from the grid is not available, the WTGs are not producing electricity, and the battery backup is insufficient to provide the necessary auxiliary power to the WTG, a temporary diesel generator (genset) would be used. Finally, an on-site diesel generator will be installed on the offshore substation (OSS) in the event that shore power is not available and the WTGs are not providing power to the OSS.

2. *EPA understands that additional information may be available regarding anticipated engine use that was not available previously in the permitting process. Please indicate the circumstances where generator engines will be located on the WTGs. Please clarify if the generators will be used during the "operational" or "construction phase" of the project (as those terms are defined in the permit), and the proposed duration and purpose of engine use.*

   SFW Response:

Construction

WTG Installation

- No gensets are expected to be used during WTG installation. Power will be provided by the jack-up vessel performing the installation work.

Commissioning (Construction Activity)

- During the commissioning phase, the WTGs will be powered by the integrated battery backup system and are not anticipated to require the use of a genset. However, if the battery backup system were to fail, or not provide sufficient power for the full duration of commissioning, temporary gensets on the WTGs would be required until the WTGs are connected to and are able to be powered by the grid.

- The temporary genset will be removed from the WTG once commissioning has been completed and the turbine has been energized with power from the grid.

Operations

- No permanent gensets will be located on the WTGs
- In case of grid outages, cable faults, or other situations where grid power is not available, the WTG's will utilize power from the integrated battery backup system.
- When operating, the WTG will generate power to charge the battery backup system during longer periods without grid power.
- A temporary diesel generator may be necessary if there were to be a grid outage, the WTGs were unable to produce power, and the integrated battery backup system was affected by a fault or otherwise lacked sufficient power. In this case, it may be necessary to transport a temporary genset to the site to power the affected WTG. The genset would be removed once the issue has been resolved.

3. *The permit application and supporting information does not clearly specify if the engines proposed for installation on the WTGs will be classified as emergency engines or non-emergency engines, as defined in 40 CFR part 60, subpart IIII. Please clarify the intended use for the diesel-fired generator engines proposed for installation on the WTGs.*

   SFW Response: No permanent gensets will be installed on the WTGs. The temporary gensets on the WTGs during the commissioning portion of the construction phase may operate under the non-emergency conditions described above. During the operational phase, gensets would only be transported to the WTGs for use during emergency conditions when the grid power, generated power, and battery backup power were not available.

4. *The permit application and supporting information does not clearly specify if the engine proposed for installation on the OSS will be classified as an emergency engine or non-emergency engine, as defined in 40 CFR part 60, subpart IIII. Please clarify the intended use for the diesel-fired generator engine proposed for installation on the OSS.*

   SFW Response: The permanent genset installed on the OSS will be used under both emergency and non-emergency conditions. During the construction phase, power to the OSS will be provided by the jack-up installation vessel. During OSS commissioning (part of the construction phase), if the connection to the grid has not been established, the permanent genset may operate to power the OSS until the grid connection is established. During the operations phase, the OSS genset may be required to operate in emergency situations where grid power is unavailable, and may be used occasionally to provide power during routine maintenance of the OSS (if grid power is unavailable or the maintenance being performed requires disconnection from the grid).

5. *The draft permit contains a requirement limiting the operation of the generator engines on the WTGs and OSS to 200 hours per year. EPA understands the generator engines were modeled to show compliance with the 1-hour NO2 NAAQS assuming an operating scenario of 200 hours per engine at each WTG and OSS location. Please confirm and clarify if necessary.*

SFW Response: At the time the application was prepared, the nature of the genset use on the OSS and WTGs was based on early development information. SFW assumed that the OSS genset would be permanent, while the genset for the WTGs would be temporary and transported to the WTG site as needed. As a conservative measure, it was assumed that the gensets would be used for routine WTG/OSS maintenance requiring up to 200 hours per year at each individual WTG/OSS location. As development progressed, the project's planned use of gensets on the WTGs is now understood to be for emergency use only and not for routine maintenance of the WTGs, nor will the gensets undergo periodic testing on the WTGs. The OSS however, will support a permanent genset that will be used for non-emergency maintenance activities and be periodically tested. SFW does not anticipate the OSS generator's use to exceed 200 hours unless an emergency event were to occur. In this case, we have assumed that the generator's use would be considered emergency and would therefore be exempt from the limitation per NSPS rules.